Indianapolis-Marion County Forensic Services Agency

Focus

Serving the Citizens & Criminal Justice System of Marion County

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Firearms Case Prioritization

The Indianapolis-Marion County Forensic Services Agency's Firearms Section conducts firearms and toolmark comparisons, footwear and tire track examination and comparisons, and physical match examinations for law enforcement agencies in Marion County.

The staff consists of five Forensic Scientists, one supervisory, and two Firearms Technicians. The Forensic Scientists are responsible for cases with comparative analysis and Firearms Technicians are responsible for routine guns that are entered into the National Integrated Ballistics Information Network (NIBIN).

Cases requiring comparison are prioritized before analysis and are the direct result of communications with the Marion County Prosecutor's Office to ensure court dates are met by the I-MCFSA in a timely manner. The priority list is as follows:

(1) homicides with known court dates;
(2) homicides with arrest hinging on forensic analysis;
(3) police action shootings;
(4) non-homicides with pending court dates;
(5) homicides with no court date or pending arrest;
(6) bodily injury cases;
(7) property damage cases; and,
(8) other offenses

The reasons for prioritization are three-fold: (1) to ensure that the most serious cases get worked first; (2) to provide investigative leads to the officer and; (3) to ensure cases are ready for trial. The goal is to analyze cases within 42 days of submission to the I-MCFSA. Rush analysis should be considered when the results are needed to make an arrest where the suspect puts public safety at risk, prepare a case for speedy trial, or officers have substantive investigative leads that indicate a possible connection between two unrelated cases. Contact the Laboratory Director for the "rush" request and the reason(s) the case should be expedited. Results from a "rush case" are usually available in 1-7 days. Please remember that a "rush case" request may be one of several that the Firearms Section is working, and with variations in case complexity and the number of items to be examined, actual examination may be more time consuming and detailed than expected.

Firearms Examiner conducting a Greiss Test

All potential evidence probative to the case should be considered in firearms cases to include latent prints, DNA, trace, etc. If an officer is unsure of the probative value of the evidence, or what types of analysis may be conducted, the laboratory should be consulted.

Prosecutors may also request a "rush" firearms analysis by submitting requests for analysis no later then 30 days prior to trial and emailing Deputy Prosecutor Denise Robinson (Homicide Division) or Michelle Sharpe (non-homicide) regarding submission of the case as "rush" on the lab "priority list."

- F/S Mike Putzek,
Firearms Section Supervisor

Crime Lab Customer Surveys

One important aspect of the lab's ASCLD/LAB-*International* accreditation is customer satisfaction. The I-MCFSA must seek feedback, both positive and negative, from our client law enforcement agencies and use this feedback to improve our quality system, testing activities and client service. Please note that feedback needs to be "positive and negative" and the lab must document this process to show compliance during future assessment by the accrediting body.

While the lab is not looking for a pat-on-the-back, positive feedback is harder to obtain. This is likely due to the fact that our law enforcement clients expect good work, get it, and generally only supply feedback in a complaint situation, which is also fairly rare. Consider how many times you write positive thoughts on a customer feedback card at a restaurant where you've just enjoyed a great meal.

The I-MCFSA sends out client surveys on a periodic basis to gather data on our operation and has historically received little in return. Please understand the importance of feedback for our services, negative and positive. Our online survey link is http://spspp01/sites/Crimelab/Lists/Customer%20Survey/overview.aspx

If you use lab services, please visit this link periodically to express your thoughts or fill out a hard copy of the same survey when you are in the lab.

Thank you!

- F/S Brenda Keller
Quality Assurance Manager

Inside this issue:

Of Note:

- The Crime Lab processed more than 47,000 items of evidence from 12,000 cases during 2008
- Evidence handling guidelines for all lab specialties are now available on our website and in hard copy format at the lab's front desk
- Hair cannot be identified to the individual from which it came unless there is a root sheath making it suitable for DNA Analysis

Hair Analysis

Many crimes involve direct physical contact between victim and suspect. Almost all contact that occurs results in an inadvertent transfer of microscopic evidence. Violent physical direct contact between a suspect and a victim can increase the amount of trace materials that can transfer. This transfer usually includes hairs (human or animal hair) and fibers (textile or rope) but may also include fabric, wood, shreds of clothing, paint, and building materials.

Hair evidence is often recovered in homicides and sexual assaults since these cases involve physical contact and hairs are readily available for transfer, easily transferred, and resilient. Hair examination may be used for associative and dissociative investigative purposes.

Brunette Caucasian Pubic Hair Comparison - Hair from Scene on Left, Suspect Standard on Right

The examination of human hairs in the forensic laboratory is typically conducted through the use of light microscopy. This examination routinely involves a three step process: the collection of evidence, the identification of questioned hairs, and the comparison of questioned and known hairs.

Much can potentially be learned from the examination of suspected hair. This information can be of value to the investigator and the judicial system. The I-MCFSA Trace Chemist can determine: whether the item is a hair, the species of the mammal that produced the hair; if human, race, body area, whether the hair was pulled out or otherwise removed forcibly, the color of the hair, how the hair was cut, if the hair was treated, bleached or dyed, and whether the hair has common characteristics with the suspected source.

While hair can never be identified to its source based strictly upon trace analysis, it may be used to include or exclude a suspect. This is particularly helpful when nuclear DNA evidence is not available (i.e. a root sheath on the hair) or mitochondrial DNA analysis does not fit the case facts. Optimum results are obtained when suitable known hair samples are available.

If you have questions concerning hair evidence please contact one of the Forensic Scientists of the I-MCFSA Trace Section: Dirk Shaw, Kathy Walton or Tami Atwell.

- Bob McCurdy,
Chemistry Unit Supervisor

ASCLD/LAB-International Accreditation

The ASCLD/LAB-*International* accreditation program of the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) is a program of accreditation in which any crime laboratory may participate to demonstrate that its technical operations and overall management system meet ISO/IEC17025 requirements and ASCLD/LAB-*International* Supplemental Requirements. Accreditation is part of a laboratory's quality assurance program which should also include proficiency testing, continuing education, customer liaison, and other programs to help the laboratory provide more effective overall service.

Operating policies of the program are developed and/or approved by the ASCLD/LAB Board of Directors. This board is comprised of members who are elected by the Delegate Assembly – a body comprised of the directors of the laboratories accredited by ASCLD/LAB.

ASCLD/LAB has adopted four objectives which define the purposes and nature of its accreditation programs. They are:

- To improve the quality of laboratory services.
- To adopt, develop and maintain standards which may be used by a laboratory to assess its level of performance and to strengthen its operation.
- To provide an independent, impartial, and objective system by which laboratories may benefit from a total operational review.
- To offer to the general public and users of laboratory services a means of identifying those laboratories which have demonstrated compliance with established standards.

There are roughly 500 standards (or criteria) that a laboratory is assessed against and must demonstrate compliance with in order to receive accreditation. This includes the FBI's DNA Audit Document criteria. The assessment is conducted by qualified and trained assessors from other accredited laboratories – at least one Technical Assessor who has expertise in the field for each section of the lab being assessed.

The on-site assessment is very comprehensive, encompassing every area of the lab's operation including its management practices, evidence handling, security, safety, training programs, proficiency testing, standard operating procedures, etc. Case files are reviewed for each employee in the laboratory.

The I-MCFSA was the 240th crime laboratory accredited under the ASCLD/LAB Legacy program in 2001 (the original version of ASCLD/LAB accreditation) and the 35th crime laboratory accredited under the ASCLD/LAB-*International* program in 2007. While most of these labs are in the US, there are labs in other countries who have received ASCLD/LAB accreditation.

The ASCLD/LAB criteria permeate the lab's procedures and Quality Assurance Manual, helping to ensure compliance. These documents, and the ASCLD/LAB-International program itself, are living documents. This means that they are updated on a regular basis to either improve the overall program or improve compliance with current standards. Corrective action is used to enforce compliance with the established standards.

While ASCLD/LAB-International Accreditation runs on a 5-year cycle, a smaller team conducts a surveillance visit yearly on short notice to help ensure continued compliance with the program.

- F/S Ron Blacklock,
Deputy Laboratory Director

Physical Evidence at the Crime Scene

When a detective or Crime Scene Specialist assesses a crime scene they should be aware that there are certain actions that may change the potential positive benefits of what story the evidence that is recovered may

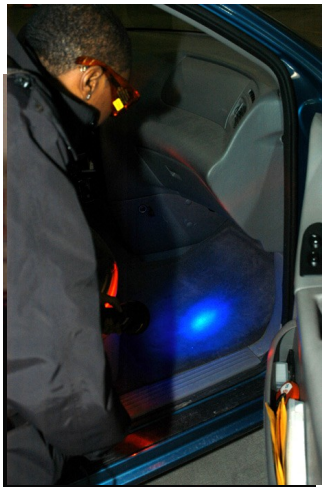
Crime Scene Specialist processing a vehicle for latent fingerprints.

reveal during analysis by the Crime Lab. For example, a footwear impression that is left unprotected in bad weather such as a rain storm; or a footwear impression that is walked on by EMS personnel will certainly impact the potential for recovering physical evidence that is identifiable to a known source. This may negatively affect the Crime Lab's ability to identify or eliminate potential suspects. Actions intentionally conducted by the perpetrator to mislead or attempt to change the surroundings at a crime scene are more difficult to control. This would include a suspect moving or hiding physical evidence at the scene to intentionally hamper the investigative process. Even a victim may unknowingly remove or discard important evidence at a crime scene, such as, a sexual assault victim showering after being assaulted by a rapist. Suspect and victim actions are beyond the control of a detective or Crime Scene Specialist; however, they must be aware that these types of actions may occur.

the main culprits affecting evidence at a crime scene are the following: EMS personnel, first responding police officers, detectives, coroner/medical examiners and Crime Scene Specialists

Decomposition coupled with insect and animal activity should also be considered when investigating crime scenes with bodies that have gone undiscovered for some time. These activities are again difficult for anyone in the investigative process to control. Notwithstanding, the main culprits affecting evidence at a crime scene are the following: EMS personnel, first responding police officers, detectives, coroner/medical examiners and Crime Scene Specialists. The basic issue of limiting the number of personnel who actually are allowed into the crime scene is one of the best ways to limit the potential for contamination of DNA, fingerprints, trace evidence, etc. In other words, the prevention of altering the physical evidence at a crime scene is not only our goal it is always the "right" thing to do. As the old popular comic strip "Pogo" once said, "We have met the enemy and it is us." Remember, by working together to ensure we allow only those with a "real need" to be inside that "yellow barrier tape," we increase our chances for finding physical evidence that identifies or eliminates a known suspect.

In his book titled, *Crime Investigation* (1953), by renowned Forensic Scientist Paul Kirk, the following quote from his book sums up the importance of the crime scene: "Wherever he steps, whatever he touches, whatever he leaves, even unconsciously, will serve as silent evidence against him. Not only his fingerprints or footprints, but his hair, the fibers from his clothes, the glass he breaks, the toolmark he leaves, the paint he scratches, the blood or semen he deposits or collects-all these and more bear mute witness against him. This is evidence that does not forget. It is not confused by the excitement of the moment. It is not absent because human witnesses are. It is factual evidence. Physical evidence cannot be wrong; it cannot perjure itself; it cannot be wholly absent. Only its interpretation can err. Only human failure to find it, study and understand it can diminish its value."



Crime Scene Specialist using an alternate light source to search for biological stains.

- Mike Smilko
Crime Scene Unit Supervisor

Forensic Video Analysis

Forensic Video Analysis is defined as the scientific examination, comparison, and/or evaluation of video in legal matters. This could include the analysis of surveillance videos from a business, a private residence, or even videos found at a crime scene. Our lab has the technology and the staffing to provide this service to law enforcement agencies. We are trained to work with both analog tapes and digital video. Although this technology provides the most advanced tools, it is important for the investigator to understand that this is not magic and we can only perform analysis on the information that was originally recorded. With most of the videos used today being digital, compression is often used to conserve space and the procedures to recover the video are critical to preserve the quality. Only a trained individual should recover digital video to maintain the integrity and provide the best available evidence. Also there are several types of DVR's used that all produce a different format of video and viewing this video is often difficult for the analyst. If a digital video is submitted to the lab the information about the DVR recording system should also be submitted. This will assist with understanding how to view the video and the type of compression that has occurred.

With no backlog in our Forensic Video Section, we can provide a quick turnaround of results, which can be helpful when trying to identify a suspect.

- Amanda Sondgeroth, Forensic Evidence Technician Supervisor

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Serving the Citizens & Criminal Justice System of Marion County

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Newsletter edited by Ronald Blacklock

I-MCFSA Crime Scene Unit

The Indianapolis-Marion County Forensic Services Agency shall provide forensic services to the Marion County Community by supporting the needs of the Criminal Justice System. The forensic services provided shall be built on a foundation of quality, integrity, accountability and ethics. All I-MCFSA ***personnel shall strive to meet forensic needs of today and into the future in all their work endeavors.***

Forensic Services Board

Michael Spears, Chairman, Chief - Indianapolis Metropolitan Police Department
Frank Anderson, Marion County Sheriff
Dr. Frank Lloyd, Marion County Coroner
Billie Breaux, Marion County Auditor
Joseph Bono, Mayoral Appointee, IUPUI Forensic & Investigative Sciences Program
Dr. Sam Nunn, City-County Council Appointee, IUPUI School of Public & Environmental Affairs

Handling of Physical Evidence

The Crime Lab occasionally receives requests for the processing of improperly packaged and protected physical evidence (latent fingerprints and DNA). This generally occurs when the case was not assigned to a detective immediately and/or the physical evidence was collected for more of a "demonstrative" versus forensic purpose, i.e., an aggravated assault case where the suspect shoots a victim who is an acquaintance and leaves the bicycle he was riding behind at the scene. It is easy to understand how physical evidence is collected more as "property" or for demonstrative purposes than evidence to be forensically processed in some cases. However, when the detective is not at the initial scene and is assigned the case after the evidence is collected as "demonstrative," the value of potential evidence is not recognized by the first responding officers, or the evidence is improperly packaged prior to forensic analysis… the Crime Lab cannot make up the difference and restore what is lost. When cases with mishandled evidence are received, the lab documents the evidence handling issues, contacts the officer, detective and prosecutor, and may cancel the analysis request on the case unless told to proceed by the Laboratory Director. It is essential that the Evidence Submission Guidelines listed on the I-MCFSA website (http://www.indy.gov/eGov/County/FSA/Pages/home.aspx) be followed to ensure that forensic analysis can be conducted on the submitted item(s) of evidence.

Proper packaging of evidence is critical when it comes to potential DNA evidence and fingerprints. The potential for tertiary DNA transfer from first responding officers or detectives to items of evidence must be a part of every officer's strategy at a crime scene. Minor crimes require the same protection of evidence as do major homicide scenes. Once evidence is not protected for "forensic analysis," and instead treated simply as "recovered property," the value of forensic analysis becomes futile and generally the recovered evidence may not be processed by the Crime Lab. As you already know, forensic analysis is very costly – not only in real dollar amounts, but in the opportunity cost associated with working on a case which has lost its forensic potential, and perhaps admissibility for court, when compared to evidence on a different case that has been handled properly and is in need of scientific answers. The cost to the criminal justice system may even be greater when, due to evidence being mishandled, the system loses confidence in the results and makes forensic analysis ineffective.

Officers should also keep in mind the fact that improperly protected evidence can result in unknown DNA profiles (i.e., the officer's) being present on the item. In the absence of an identification of the suspect, this unknown profile can potentially be argued as that of the "true perpetrator" at trial. Even under laboratory conditions, our own employee's profiles are occasionally identified on items of evidence. Therefore, all lab employee's have their DNA profiles in a local database to allow for separation of the inadvertently transferred DNA profiles of those who had legitimate access to the evidence.

Remember, when you get right down to the nuts and bolts of an investigation…**it is all about the evidence.**

- Mike Medler,
Laboratory Director